In re Appln. of WANG et
Application No. 09/458,139
Reply to Office action of May 22, 2003

REMARKS / ARGUMENTS

In the application, no claims currently stand allowed and claims 1-46 stand rejected. Claim 12 was rejected under 35 USC § 112, ¶ 2 for failing to have proper antecedent basis. Claims 1, 2, 4, 5, 14 – 18, 24, 25, 27, 28, and 37 – 41 were rejected under 35 USC § 103(a) as being unpatentable over "Harnessing User-Level Networking Architectures for Distributed Object Computing over High-Speed Networks" by Madukkarumukumana et al. ("Madukkarumukumana") in view of "Virtual Interface Architecture Specification, Revision 1.0" ("VIA") and "COMERA: COM Extensible Remoting Architecture" ("COMERA"). Claims 3, 6, 7, 26, 29, and 30 were rejected under 35 USC § 103(a) as being unpatentable over Madukkarumukumana, VIA, and COMERA in view of Kougiouris et al. ("Kougiouris"), U.S. Patent No. 6,131,126. Claims 8, 13, 19, 20, 31, 36, 42, and 43 were rejected under 35 USC § 103(a) as being unpatentable over Madukkarumukumana, VIA, and COMERA in view of Lim et al. ("Lim"), U.S. Patent No. 6,044,409. Claims 9 – 12, 21 – 23, 32 – 35, and 44 – 46 were rejected under 35 USC § 103(a) as being unpatentable over Madukkarumukumana, VIA, COMERA, and Lim in view of Kougiouris.

Independent claims 1, 14, 24, and 37 and dependent claims 4 and 27 have been amended to include a further clarification that the RPC layer recited in the claims is an RPC run-time layer. Additionally claim 12 was amended to have proper antecedent basis.

Examiner Interview #1 Summary

Applicants acknowledge with appreciation the courtesy of a telephone interview granted to Applicants' representatives by Examiner Zhen on August 11, 2003. Mr. Scott Schulhof represented the Applicants. The Examiner's Interview Summary Form appears at paper no. 9. Pursuant to 37

In re Appln. of WANG et
Application No. 09/458,139
Reply to Office action of May 22, 2003

C.F.R. § 1.133(b), the following is a complete written statement of the reasons presented at the interview as warranting favorable action.

Claim 1 was discussed with respect to the COMERA reference. Applicants pointed out that the COMERA reference teaches a custom marshalling technique while the claims of the present application are directed toward a direct marshalling scheme. Specifically, Applicants pointed to Figures 2 and 3 of the COMERA reference. Figure 2 illustrates the Component Object Model architecture, including an RPC channel while the custom marshalling scheme of COMERA, illustrated in Figure 3 lacks the standard RPC channel. Applicants reasoned that all of the pending claims either recite a limitation of an RPC layer or depended from such claims, hence, the rejection of the independent claims on the basis of the COMERA reference could not be supported. Examiner Zhen declined to accept this explanation, reasoning that the COMERA channel object would read on the claim limitation of an RPC layer, as the COMERA channel object is an extension of the RPC channel and would also perform the functions of an RPC layer. No agreement with respect to the claims was reached.

Examiner Interview #2 Summary

Applicants acknowledge with appreciation the courtesy of a second telephone interview granted to Applicants' representatives by Examiner Zhen on October 9, 2003. Mr. Scott Schulhof represented the Applicants along with Mr. Yi-Min Wang, one of the inventors of the present application and co-author of the COMERA reference. The Examiner's Interview Summary Form appears at paper no. 10. Pursuant to 37 C.F.R. § 1.133(b), the following is a complete written statement of the reasons presented at the interview as warranting favorable action.

In re Appln. of WANG et ●
Application No. 09/458,139
Reply to Office action of May 22, 2003

Claim 1 was again discussed with respect to the COMERA reference. Mr. Wang gave a thorough explanation of the differences between a custom marshalling scheme, such as the one taught by the COMERA reference and a direct marshalling scheme, such as the one claimed in the present application. Mr. Wang explained that a remoting architecture will typically include three layers: 1.) a marshalling layer; 2.) a run-time layer; and 3.) a transport layer. The marshalling layer packages data in a form for the run-time layer to effectuate a transmission of that data over the network. The transport layer determines how to send the data as packets over the network. In a custom marshalling scenario this remoting architecture is completely ripped out and replaced with a custom remoting architecture. This is exactly what the COMERA reference teaches; a custom remoting architecture that is componentized for ease of use. In contrast, the direct marshalling scheme of the present invention merely alters the mechanics of the marshalling layer leaving the run-time and transport layers intact. As Mr. Wang explained, this is an important distinction because, as described in the application, the direct marshalling scheme of the present invention continues to leverage the standard RPC run-time layer and its functionality (i.e., security, thread management, socket connection management, etc.). Specifically, the present application describes the use of "the RPC layers to communicate the call parameters across the network". Application, p. 18, lines 21-22. For example, "the RPC run-time layers 126 and 136 interpret the data 152 and 156 as a list of scatter-gather entries, each comprising a starting memory address of the data they point to and the length of the data. As shown in Figure 4A, the RPC run-time layer 126 adds RPC headers to the list 152 and passes it to the loadable transport layer 128." Id. at p. 19, lines 4-8. Other RPC mechanisms, such as security, thread management, and socket connection management, are also utilized. See Id., p. 25, lines 15-16. Conversely, as explained by Mr. Wang, by wholesale

In re Appln. of WANG et⬤
Application No. 09/458,139
Reply to Office action of May 22, 2003

replacing the standard remoting architecture the custom marshalling techniques of COMERA and

Madukkarumukumana lose all benefits of RPC communication and instead become a low level

communication system with a COM face. With this background in place, Examiner Zhen then

suggested that Applicants amend the claims to specify that the RPC layer recited in the claims is the

RPC run-time layer.

Accordingly, previously pending independent claims 1, 14, 24, and 37 and previously

pending dependent claims 4 and 27 have been amended and now recite that the RPC layer is an

"RPC run-time layer." To address the 35 USC § 112, ¶ 2 rejection of the current Office action,

claim 12 has been amended to recite that the send buffer is "the second send buffer."

All of the pending claims now either include language clarifying that the RPC layer of the

present invention is an RPC run-time layer or depend from claims that include such language.

Additionally all of the pending claims now have sufficient antecedent basis. Therefore,

Applicants submit that the rejections in the Office action have been rendered moot. As this

technique for accelerating a distributed component architecture over a network using a direct

marshalling is not discussed in, nor rendered obvious by, the cited art, Applicants further submit

that all of the pending claims are now allowable.

In re Appln. of WANG et
Application No. 09/458,139
Reply to Office action of May 22, 2003

CONCLUSION

In view of the above amendments and remarks, the application is considered in good and

proper form for allowance. The Examiner is respectfully requested to pass this application to

issue. If, in the opinion of the examiner, a telephone conference would expedite the prosecution

of the subject application, the examiner is invited to call the undersigned attorney.

Respectfully submitted,

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